



## Pressure Mapping Tests for OLA 4 & OLA 8

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### Update

In 2015 Select Medical underwent a brand update, with the introduction of some new brands, but also the re-naming of some existing products. OLA 4 and OLA 8 both fall into the re-naming category. Both mattresses previously went through rigorous pressure mapping tests, although under different names as shown below, and since then have not undergone any other changes. The data and results shown are therefore still as relevant today as they were when the tests were carried out in 2010.

For ease of reading the names have been updated in the following text to reflect the recent name changes.

OLA Elegant (previously) - OLA 4 (now)

OLA Classic (previously) - OLA 8 (now)

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### Summary

The OLA 4 dynamic mattress overlay and OLA 8 dynamic mattress replacement system show a reduction in interface pressures across the area of the support surface, with a choice of firmness available to the user.

The variability in peak pressure throughout the cycle indicates that the position of greatest pressure is continually moving so that no one area is subjected to constant high pressure. These findings are particularly relevant for those persons with reduced mobility and at risk of pressure damage.

## Aims

To investigate the OLA 4 and OLA 8 dynamic mattress systems and the effect they have on support pressures during prolonged periods.

Two subjects were chosen for the tests:

**Subject 1 – Diagrams 1 & 2:** Female      Height 158 cm      Weight 53 kg

**Subject 2 – Diagrams 3 & 4:** Male      Height 182 cm      Weight 90 kg

The subjects are of different weights which helps to evaluate and more accurately test the equipment supplied.

## Equipment

Tests were made using a renowned Pressure Mapping application.

The Pressure Mapping system is a complete kit which converts a PC into an advanced pressure distribution measurement system. Using sensors in a normal operational environment, the system can sample pressure data as it happens (in real time), present the information as a colour-coded real-time display, and record the information (as a 'movie') for later review and analysis. The application of a pressure to an active sensor results in a change in the resistance of the sensing element in inverse proportion to the pressure applied. After a simple calibration is performed, this force can be displayed on the screen in the measurement units that you choose, such as KPa; PSI or mmHg.

For this investigation all measurements were taken in mmHg.

## Method

### OLA 4

The first subject was placed in a recumbent position on the OLA 4 dynamic system (Diagram 1) and then the bed was raised to a semi-recumbent position (Diagram 2). Measurements were taken over the period of several cycle changes and the results recorded.

### OLA 8

The second subject was placed in a recumbent position on the OLA 8 dynamic system. Again measurements were then made and the results observed.

Whilst the procedures were to be carried out the subjects were asked to make an opinion of how the mattresses felt regarding comfort and relief. Both subjects commented that they felt comfortable and suitably supported.

## Results

Diagram 1: OLA 4 (recumbent position)

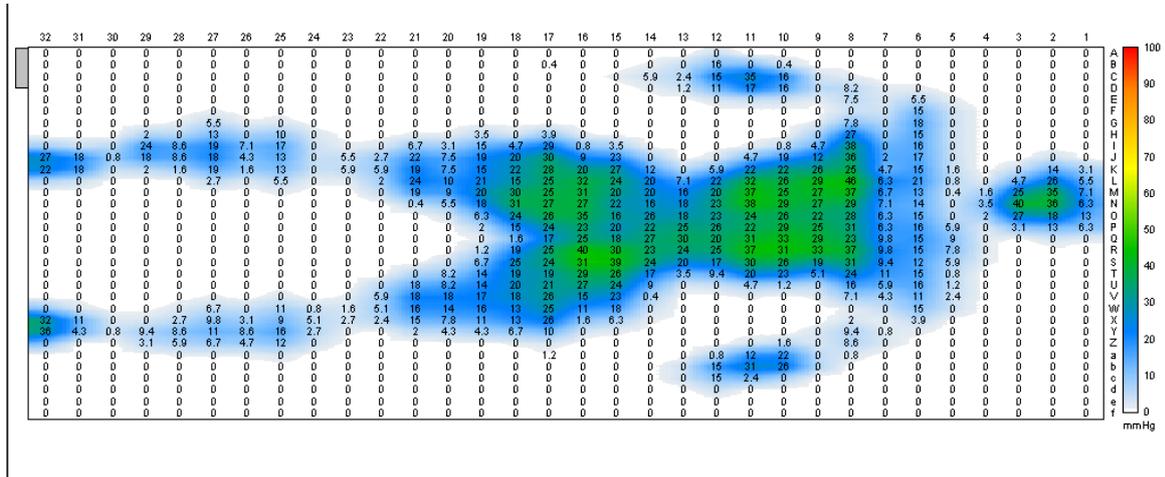
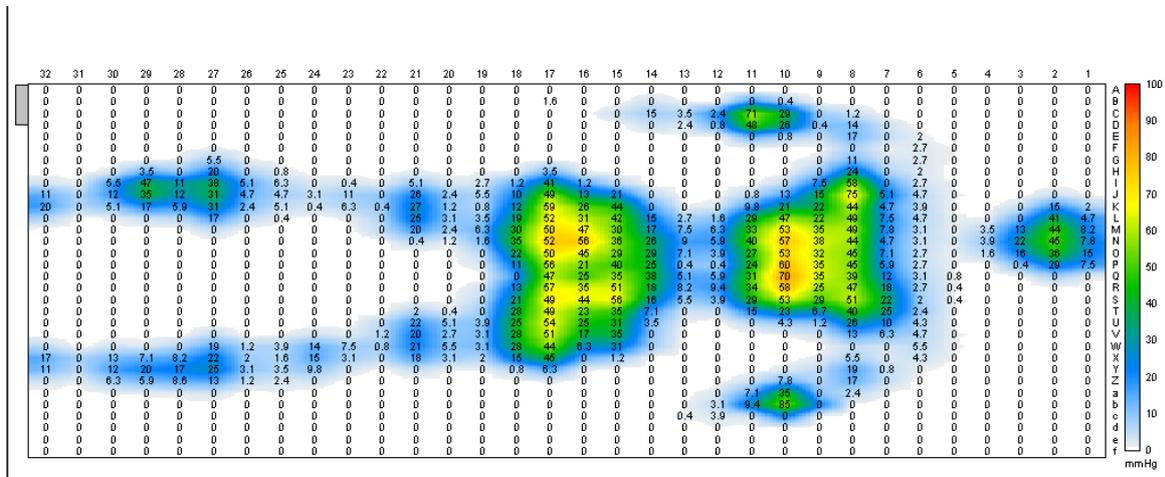


Diagram 2: OLA 4 (semi-recumbent position)



**OLA 4:** Diagram 1 shows the interface pressures at their lowest following change-over. Diagram 2 shows the pressures at the peak of the cycle change in a semi-recumbent position. Diagrams 1 and 2 show that there is significant reduction in observed interface pressure on the OLA 4 mattress over the period of two cycle changes and changing from a recumbent to semi-recumbent position.

Diagram 3: OLA 8

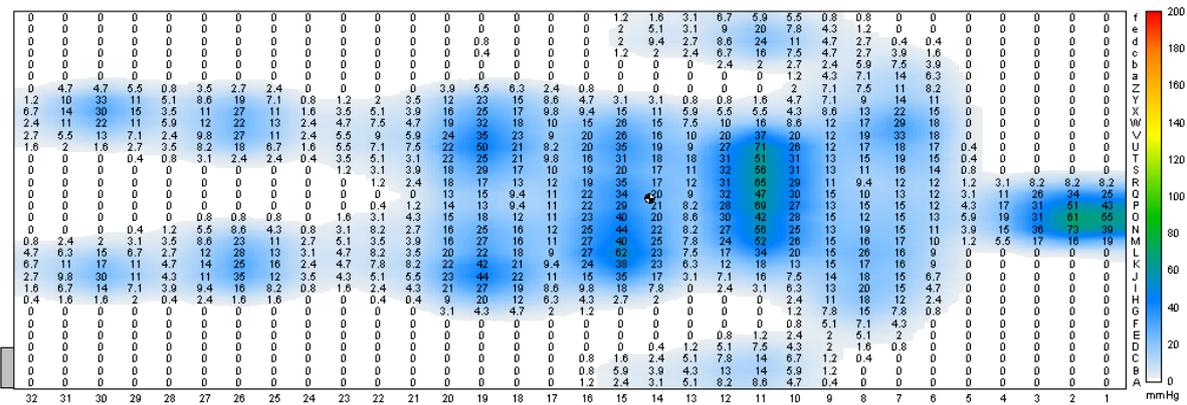
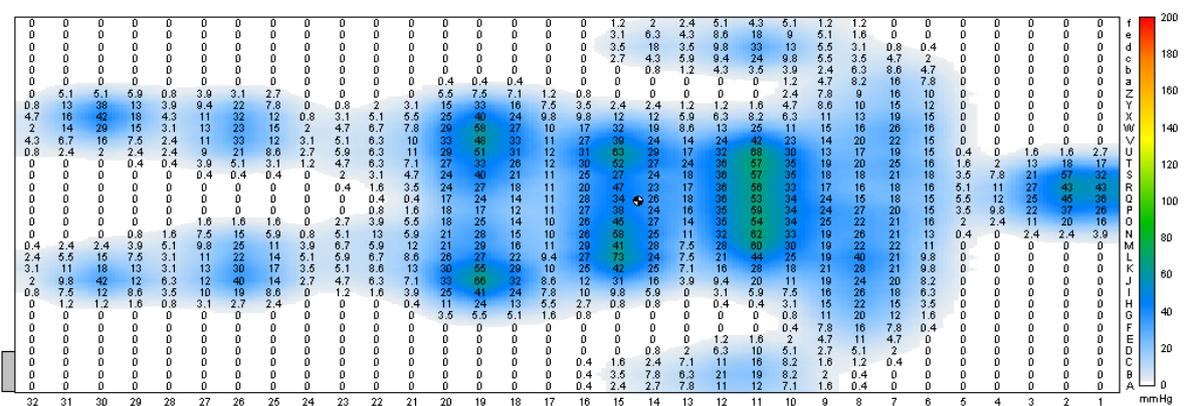


Diagram 4: OLA 8



**OLA 8:** With a much heavier load applied to the OLA 8 mattress system, Diagrams 3 and 4 demonstrate the effectiveness of the OLA 8 dynamic mattress system in noticeably reducing interface pressures.

### Conclusion

Our tests demonstrate that both the OLA 4 and OLA 8 mattress systems proved beneficial by relieving interface pressures between the subjects used and the support surfaces.

The equipment helps reduce harmful pressures that over periods of time could cause serious health issues to those at risk of pressure damage. The spreading of the surface area and the greater support given by these dynamic mattress systems allow the support surfaces to provide an excellent relevance in patient care.

It should be noted that results on our Pressure Mapping equipment are for comparative use only and may vary according to both ambient and subject body temperature, but care is taken during testing to ensure that these are kept as near stable as possible.